

The opinion in support of the decision being entered
today was not written for publication and is
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Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOSHIAKI TAKAKU

Appeal No. 2000-0156
Application 08/531,023

ON BRIEF

Before THOMAS, LALL and GROSS, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's
final rejection of claims 6, 8, 9, 11, 12 and 14.

Independent claim 6 is reproduced below:

6. In a thermal chemical vapor deposition apparatus having
a quartz glass reaction tube that is used for heat-treating
semiconductor wafers, the improvement which comprises:

making the quartz glass reaction tube from transparent
quartz glass; and

providing the quartz glass reaction tube with at least one
sand-blasted internal wall surface portion, which at least one
said-blasted internal wall surface portion has a center-line mean
roughness in the range of 1 Fm to 20 Fm and is heated by a heater
during heat-treatment.

The following reference is relied on by the examiner:

Hiroyuki (Japanese)	55-127021 ¹	Oct. 01, 1980
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Claims 6, 8, 9, 11, 12 and 14 stand rejected under the enablement portion of the first paragraph of 35 U.S.C. § 112 as well as the second paragraph of this statutory provision. These claims also stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon alleged appellant's admitted prior art in view of Hiroyuki.

Rather than repeat the positions of the appellant and the examiner, reference is made to the brief and the answer for the respect details thereof.

OPINION

We reverse each of the three rejections of the claims on appeal.

As to the enablement issue within 35 U.S.C. § 112, first paragraph, the specification of the patent must teach those skilled in the art how to make and use the claimed invention without undue experimentation. Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1365, 42 USPQ2d 1001, 1004 (Fed. Cir.), cert.

¹ Our understanding of this reference is based upon a translation provided by the Scientific and Technical Information Center of Patent and Trademark Office. A copy of the translation is enclosed with this decision.

denied, 118 S.Ct. 397 (1997). This same case indicates that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the disclosure.

The examiner's "criticality" analysis under the first paragraph of 35 U.S.C. § 112 rejection is misplaced. The examiner cites In re Mayhew, 527 F.2d 1229, 1233, 188 USPQ 356, 358 (CCPA 1976). This case concerns a scope of enablement issue. Because the earlier noted case law indicates that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the disclosure, the examiner's position is clearly misplaced. The recitation in independent claim 6 of the center-line mean roughness in the range of 1 Fm to 20 Fm and the more specific range of 2 Fm to 10 Fm in claim 8 are coextensive with the recitation of these same values in the Summary of the Invention at specification page 5, lines 3-8 and original claim 4 at pages 15 and 16 of the specification as filed.

Because the scope of the claimed invention is not broader in scope than the disclosed invention but consistent therewith, there is no issue that arises within the undue breadth or scope of enablement case law cited by the examiner and the arguments made by the examiner in the answer. Since the breadth of enablement is commensurate in scope with the claimed invention,

the rejection of the claims under the first paragraph of 35 U.S.C. § 112 must be reversed. Note the consistency in Enzo Biochem., Inc. v. Calgene, Inc., 188 F.3d 1362, 1376, 52 USPQ2d 1129, 1139-40 (Fed. Cir. 1999) with the earlier noted Genentech case.

The examiner's rejection of the claims on appeal under the second paragraph of 35 U.S.C. § 112 is also reversed. The use of the term "transparent" to describe in claim 6 quartz glass is not vague and indefinite to the artisan and the scope of the meaning of this term is reasonably ascertainable by the artisan.

As to this rejection of the claims on appeal under the second paragraph of 35 U.S.C. § 112, it is to be noted that to comply with the requirements of the cited paragraph, a claim must set out and circumscribe a particular area with a reasonable degree of precision and particularity when read in light of the disclosure and the teachings of the prior art as it would be by the artisan. Note In re Johnson, 558 F.2d 1008, 1016 n.17, 194 USPQ 187, 194 n.17 (CCPA 1977); In re Moore, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971).

As pointed out by appellant at page 10 of the brief, the term "transparent" is used to describe quartz glass and is not used alone. As such, it clearly describes a known physical

property of a known material. The specification to us is written in a manner that the artisan clearly would have reasonably understood. As evidenced by appellant's presentation of the U.S. Patent 4,953,046 to Uchikawa and U.S. Patent 5,306,388 to Nakajima, the physical properties of transparency or non-transparency are known in the art as they apply to quartz glass. Also as pointed out at page 10 of the brief, column 1, lines 21-29 of Uchikawa and column 1, lines 27-35 of Nakajima are consistent with appellant's own characterization in the third paragraph of the abstract of the disclosure at page 17 of the specification as filed as well as the fourth paragraph of the Summary of the Invention at page 4. It thus appears to us that the art itself reasonably defines the scope of "transparent quartz glass" as set forth in claim 6 on appeal. We thus reverse the rejection of all the claims on appeal under the second paragraph of 35 U.S.C. § 112.

Lastly, we consider the rejection of all the claims on appeal under 35 U.S.C. § 103 and reverse it as well. The examiner's position is bottomed upon the view that the recitation of transparent quartz glass in the body of independent claim 6 on appeal is a part of the admitted prior art of appellant based upon a fair reading of the discussion of the disclosed invention at page 9, line 12 through page 10, line 13. Although we agree

with the examiner's contention that, in context, the use of the language "[i]n such a well known CVD apparatus," as recited at page 10 of the specification, line 13 would have suggested that the disclosed Figure 1 apparatus is known in the art to be comprised of trans-parent quartz glass for the reaction tube 10 as indicated at the bottom of page 9 of the specification, we are persuaded by appellant's arguments at pages 11 and 12 of the brief on appeal.

The examiner's position does not consider the statements in the Summary of the Invention at page 4 that the invention comprises essentially two features, the first being that the reaction tube is made of transparent quartz glass, and secondly that portions of it are sand-blasted. This same discussion is set forth in the abstract of the invention at page 17 of the specification as filed. We also observe that the originally filed version of claim 1 recited in the characterization clause of this claim contains the same two features.

We therefore conclude that the weight of the evidence indicates to us that the feature of transparent quartz glass in the body of claim 6 on appeal is not disclosed in specification as a whole in the context of being part of the prior art but, on the contrary, it is disclosed to be a part of appellant's disclosed invention. That being the case, there is no applied prior art before us that teaches

or suggests that a quartz reaction tube was known in the prior art to

be made of transparent quartz glass in the context of the invention set forth in independent claim 6 on appeal. We agree with appellant's observations beginning at page 13 of the brief that Hiroyuki fails

to teach the use of transparent quartz glass. As such, even if the properly admitted prior art known and admitted by appellant is combined with Hiroyuki, there is no teaching or suggestion of a transparent quartz glass reaction tube as claimed. Therefore,

we must reverse the rejection of the claims on appeal under 35 U.S.C. § 103.

In closing, we have reversed each of the rejections of the claims on appeal, that under the first paragraph of 35 U.S.C. § 112, that under the second paragraph of 35 U.S.C. § 112, and that under 35 U.S.C. § 103. Therefore, the decision of the examiner is reversed.

REVERSED

Appeal No. 2000-0156
Application 08/531,023

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